



## PERINEAL URETHROSTOMY: JOURNEY REVISITED

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**ABSTRACT**

**Introduction:** Hesitation to offering a perineal urethrostomy to a patient is on the false belief that the satisfaction in regards to urination and sexual performance is low. **Method:** We have done observational descriptive study and evaluated 50 patients. We included patients between the ages of 40-70 years with urethral stricture diseases and excluded patients who were having PFUD disease and those who have not completed their family. Quality of life is calculated using validated questionnaire by PROM-USS. **Results:** Most of our patients were in 60-70 years' age group 30/50 i.e. 60%. Most common aetiology of stricture was idiopathic (18) followed by iatrogenic (15), traumatic (9) and post infectious (8). Average length of stricture was more than 6 cm and involving anterior urethra. Patients were followed up for median 14 months. Preoperative IPSS score was 27 +/- 4.5 and postoperative was 9 +/- 5. SHIM scoring preoperative and postoperative were same ~ 21. PROM-USS for LUTS was significantly reduced from median of 19 to 8.5 and QOL from median of 5.5 to 2. Success rate with previous urethrotomy, urethroplasty, multiple treatment and no treatment patients were 15/17(88%), 9/12(75%), 11/14(78%), 7/7(100%) respectively. Most of the patients were satisfied with the procedure. And few of them (3) reported that postejaculatory dysfunction bothering them. In patients in whom second surgery was indicated that is in patients with bladder outlet obstruction the endoscopic procedure was done without any difficulty. **Conclusions:** These reports will likely increase the acceptance of perineal urethrostomy by patients and as well as urologists.

**KEYWORDS :****Introduction-**

Surgical options for the anterior urethral strictures are very diverse. These include endoscopic procedures like VIU (visual internal urethrotomy) to multitude of different urethroplasty techniques.<sup>1,4</sup> Urethroplasty is the best option in case of urethral stricture disease.<sup>5,6</sup> With a success rate of >80%,<sup>7,8</sup> urethroplasty is also associated with a failure rate of 10-50% in some patients, depending on stricture etiology, length, previous interventions, and the type of technique used.<sup>9-12</sup> Stricture recurrence after (multiple attempts of) failed urethroplasty might trigger the decision to stop further attempts. The surgeon might take this decision as no further reconstructive options left or the patient as he does not want further reconstruction.<sup>13</sup> At that point, perineal urethrostomy (PU) is a good option. The AUA (American Urological Association) guidelines recommends perineal urethrostomy as an option in patients with "recurrent or primary complex anterior stricture, advanced age, medical comorbidities precluding extended operative time, extensive lichen sclerosus, numerous failed attempts at urethroplasty and patient choice."<sup>14</sup> Perineal urethrostomy is a minor surgical intervention and can be performed on an outpatient basis with an early return to normal activities.<sup>15</sup> PU allows the patient to resume voiding and sexual function with high patient satisfaction and quality of life.<sup>13,15,16</sup> This procedure is reported to be a satisfactory solution, especially in the elderly.<sup>13</sup> PU is also done in cases of urethrectomy and/or penectomy.<sup>17,18</sup> Different types of PU have been described.<sup>16,19-20</sup> In this study, our aim was to describe the sexual and functional outcomes of perineal urethrostomy in a cohort of men who had a different types of urethral disease. These techniques are mainly derived from the first stage of the two-stage urethroplasty described by Johanson<sup>21</sup> and Blandy et al.,<sup>22</sup>

urethral stricture disease from October 2018 to January 2021 in our urology department as part of a plan for a staged urethroplasty repair of a complex urethral stricture.

**Inclusion criteria -**

- Patients from 40-70 years.

**Exclusion criteria -**

- Patients with Pelvic Fracture Urethral Distraction Defects were excluded from the study.
- Those who has not completed family.
- Preoperative evaluation included clinical history, physical examination, urine culture, post residual urine measurement, uroflowmetry, retrograde and voiding cystourethrography, IPSS, SHIM score, PROM-USS.

**Follow up -**

Patients were followed up on a regular basis with history taking, clinical examination, IPSS, SHIM, PROM USS and uroflowmetry at 1, 6, 12 months and later annually. In case of suspicion of stenosis, urethrography and urethroscopy were performed. Need for any auxiliary urethral instrumentation (including dilation) was defined as failure.

**Surgical technique -**

Patients were placed in the lithotomy position. For Blandy PU, an Inverted-U perineal incision was made. The bulbar urethra was exposed and opened ventrally. The urethrotomy was extended proximally until healthy urethra was encountered. The urethrotomy was extended into the membranous urethra up to the verumontanum. In this series, a complete transection of the urethra with mobilization of the proximal urethral stump towards the perineum was never performed. For Blandy PU, the apex of the inverted-U perineal flap was sutured to the most proximal part of the opened urethra. The edges of the perineal flap were further sutured distally to the urethral mucosal edges with Vicryl 3.0. From the moment tension

**Materials and methods -**

- The study was a observational descriptive study of 50 patients who underwent perineal urethrostomy for anterior

occurred between the sutures, a midline incision was made at the posterior scrotal skin, and two scrotal skin flaps were mobilized to finalize the PU.

**Statistical analysis-**

Paired 't' test applied to table 2 for preoperative and postoperative IPSS score for which the 't' value was 14.12 and 'p' was 0.0001 which was statistically significant. Chi square test was applied in table 3 for SHIM scoring the Chi square value was 0.708, and 'p' value was 0.80 which was not significant. Other tables did not require any test.

**Results-**

Most of our patients were in 60-70 years' age group 30/50 i.e. 60% (table-1). Most common aetiology of stricture was idiopathic (18) followed by iatrogenic (15), traumatic (9) and post infectious (8). Average length of stricture was more than 6 cm and involving bulbar urethra (table-1). Patients were followed up for median 14 months (table-1). Preoperative IPSS score was 27 +/- 4.5 and postoperative was 9 +/-5 (table-2). SHIM scoring preoperative and postoperative were same ~ 21 (table-3). Pre operative Q-Max was in the range of 3-7ml/sec which got increased to 12-15ml/sec (table-7). PROM-USS for LUTS was significantly reduced from median of 19 to 8.5 (table-4) and QOL from median of 5.5 to 2 (table-4). Success rate with previous urethrotomy, urethroplasty, multiple treatment and no treatment patients were 15/17(88%), 9/12(75%), 11/14(78%), 7/7(100%) respectively (table-6). Most of the patients were satisfied with the procedure. And few of them (4) reported that postejaculatory dysfunction bothering them (table-5). In patients in which second surgery was indicated that is in patients with bladder outlet obstruction the endoscopic procedure was done without any difficulty.

**Tables for perineal urethrostomy**

**Table-1**

	Idiopathic	Iatrogenic	Traumatic	Inflammatory
No. of patients	18	15	9	8
Age(years)				
41-50	2	2	1	1
51-60	5	3	2	4
61-70	5	3	1	1
>70	6	7	5	2
Length of stricture(cm)	6-8	6-7	3-4	3-4
Location of stricture	Panurethral	Penobulbar	Bulbar	Bulbar
Follow up(months)	14-36	20-30	16-20	14-30

**Table-2**

IPSS score	Pre operative	Post operative	p-value
	27 +/- 4.5	9 +/-5	0.0001

**Table-3**

SHIM scoring	Pre operative	Post operative	p-value
Severe (1-7)	1	1	0.80
Moderate (8-11)	1	1	
More than mild (12-16)	2	2	
Mild (17-21)	13	17	
Normal (22-25)	25	21	

**Table-4**

PROM-USS	Pre operative	Post operative
LUTS	19(16-22)	8.5(5-12)
QOL	5.5 (3-8)	2 (0-4)

**Table-5**

Ejaculatory function affecting QOL	
Yes	No
4	38

**Table-6**

Previous surgery	Urethrotomy	Urethroplasty	Multiple treatment	No previous surgery
Success rate %	15/17 (88)	9/12 (75)	11/14 (78)	7/7(100)

**Table-7**

Qmax (ml/sec)	Pre operative	Post operative
	3-7 (5)	10-15 (12.5)

**Discussion-**

We evaluated our results according to patient age, stricture etiology, length and prior treatments. Our reconstructive approach for complex urethral stricture has gradually changed to with new evidences and refinement in technique. Although BMG continues at a stable rate, accounting for nearly two-thirds of complex cases, penile skin flap became less common and use of PU increases dramatically in elderly. Successful outcome without need for additional intervention remained nearly universal following PU. This high success rate (84%) (table-6) from PU occurred despite patients having older age, Pan urethral strictures, failed prior urethroplasty. Peterson et al first reported a success rate of 100% in 52 men undergoing perineal urethrostomy.<sup>23</sup> Subsequently, Kulkarni et al, in a multicenter study, examined 215 patients treated with a variety of urethral surgeries for lichen sclerosis.<sup>16</sup> This included 47 men who underwent perineal urethrostomy with a success rate of 72%. One possible explanation is that the rate of prior urethroplasty was relatively low in the report by Peterson et al (18%) compared with Kulkarni's population.

Urethral stricture disease patients reported no significant difference in PROM scores after undergoing perineal urethrostomy in comparison to urethroplasty. When compared to baseline parameters, patients treated with perineal urethrostomy reported improved urinary function and no adverse effect on sexual function. Perineal urethrostomy often remains a last option for many urologists.<sup>19</sup> Reasons why patient do not opt perineal urethrostomy is change in posture to urinate especially in those patients in which perineal urethrostomy was made more anteriorly on the urethra, appearance of perineum and change in ejaculation function, these things should be discussed with the patient preoperatively.<sup>24</sup>

Previous study showed the benefits of perineal urethrostomy but they used nonvalidated patient questionnaires including little about urinary or sexual function.<sup>13</sup> And, they did not use preoperative questionnaires nor a control or comparison group. Another study reviewed 2 techniques of perineal urethrostomy (the Johanson and Blandy techniques) and found similar recurrence rates and urinary quality of life outcomes.<sup>25</sup> But they have not compared sexual outcome as well as postejaculation function.

Many patients 17 (table-6) have undergone prior endoscopic procedures.<sup>23,26-28</sup> In the large subset of patients i.e 43/50 with complex and/or recurrent stricture, a history of repeated endoscopic interventions, prior failed urethroplasty and multiple treatments, it is becoming increasingly common.<sup>26,27</sup> The increasing use of PU in these cases and its associated chronic, progressive and refractory natural history of stricture disease, likely contributes to patient treatment fatigue and preference for a surgery with the highest success rate.

Although patients undergoing PU differed from those who

underwent urethroplasty procedures with using various kind of graft/flap, on multivariate analysis only surgery year, stricture etiology, and patient age were associated with reconstructive approach. PU was more commonly chosen in older men (>60yrs) who have completed their family compared to BMG and penile skin flap patients, who tended to be younger. Patient priorities for surgery change over time, and PU has been historically reserved for patients of advanced age. Patient satisfaction following PU has been reported up to 97.1% at a median age of 60 years<sup>13</sup> which is identical to satisfaction in young age group men i.e. 97% satisfaction rate in men aged 23-49 years<sup>13</sup>. We now increasingly offer PU for men less than 60 years of age, especially those who have completed their family.

Among patients in which perineal urethrostomy was failed according to our definition of failure, 5 among 8 patients required endoscopic dilatation and rest 3 underwent transurethral incision of prostate.

This data reflects a tertiary referral centre experience. The trend toward PU reflects awareness of the limitations of tissue transfer techniques to provide lasting relief of voiding symptoms in the presence of severely damaged tissue. Patients are counselled and given both surgery as their options, he need to understand the importance of this procedure and the avoiding of repeated interventions which both psychologically and financially demanding, and ultimately he will decide on their own reconstructive approach. Perhaps the trend toward PU is due to highest probability of success. We were not able to determine each patient's reasons for choosing or declining a particular reconstructive approach. Despite these limitations, this study offers value in describing the evolution in the management of difficult urethral stricture cases.

### Conclusion-

Perineal urethrostomy is often a necessary procedure in cases of failed urethroplasty and especially in those patients who have completed their family with having repeated failed urethroplasty and complex urethral stricture disease. Patient satisfaction following this surgical procedure is high and quality of life is not negatively influenced.

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